Weatherproof Outdoor Pan/Tilts

Instructions for Use

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LTC 9418 Series
LTC 9420 Series

Philips
Communication &
Security Systems

PHILIPS

IMPORTANT SAFEGUARDS

1. Read Instructions - All the safety and operating instructions should be read before the unit is operated.
2. Retain Instructions - The safety and operating instructions should be retained for future reference.
3. Heed Warnings - All warnings on the unit and in the operating instructions should be adhered to.
4. Follow Instructions - All operating and use instructions should be followed.
5. Cleaning - Unplug the unit from the outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
6. Attachments - Do not use attachments not recommended by the product manufacturer as they may cause hazards.
7. Water and Moisture - Do not use this unit near water - for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, near a swimming pool, in an unprotected outdoor installation, or any area which is classified as a wet location.
8. Accessories - Do not place this unit on an unstable stand, tripod, bracket, or mount. The unit may fall, causing serious injury to a person and serious damage to the unit. Use only with a stand, tripod, bracket, or mount recommended by the manufacturer, or sold with the product. Any mounting of the unit should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

   An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

9. Ventilation - Openings in the enclosure, if any, are provided for ventilation and to ensure reliable operation of the unit and to protect it from overheating. These openings must not be blocked or covered. This unit should not be placed in a built-in installation unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
10. Power Sources - This unit should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply you plan to use, consult your appliance dealer or local power company. For units intended to operate from battery power, or other sources, refer to the operating instructions.
11. Grounding or Polarization - This unit may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

    Alternately, this unit may be equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.
12. Power-Cord Protection - Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords and plugs, convenience receptacles, and the point where they exit from the appliance.
13. Power Lines - An outdoor system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outdoor system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal. U.S.A. models only - refer to the National Electrical Code Article 820 regarding installation of CATV systems.
14. Overloading - Do not overload outlets and extension cords as this can result in a risk of fire or electric shock.
15. Object and Liquid Entry - Never push objects of any kind into this unit through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the unit.
16. Servicing - Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
17. Damage Requiring Service - Unplug the unit from the outlet and refer servicing to qualified service personnel under the following conditions:
    a. When the power-supply cord or plug is damaged.
    b. If liquid has been spilled, or objects have fallen into the unit.
    c. If the unit has been exposed to rain or water.
    d. If the unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions, as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the unit to its normal operation.
    e. If the unit has been dropped or the cabinet has been damaged.
    f. When the unit exhibits a distinct change in performance--this indicates a need for service.
18. Replacement Parts - When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.
19. Safety Check - Upon completion of any service or repairs to this unit, ask the service technician to perform safety checks to determine that the unit is in proper operating condition.
20. Coax Grounding - If an outside cable system is connected to the unit, be sure the cable system is grounded. U.S.A. models only--Section 810 of the National Electrical Code, ANSI/NFPA No.70-1981, provides information with respect to proper grounding of the mount and supporting structure, grounding of the coax to a discharge unit, size of grounding conductors, location of discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.
21. Lightning - For added protection of this unit during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the cable system. This will prevent damage to the unit due to lightning and power-line surges.

SAFETY PRECAUTIONS

CAUTION

RISK OF ELECTRIC SHOCK. DO NOT OPEN!

CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT OPEN COVERS. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This label may appear on the bottom of the unit due to space limitations.

The lightning flash with an arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE UNPROTECTED COMPONENTS TO RAIN OR MOISTURE.

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UNPACKING

Unpack carefully. This is mechanical equipment and should be handled with care.

Check for the following items:

- Verify the unit model number.
- 3/32-inch Allen wrench.

If an item appears to have been damaged in shipment, replace it properly in its carton and notify the shipper. If any items are missing, notify your Philips Communication & Security Systems Inc. Sales Representative or Customer Service.

The shipping carton is the safest container in which the unit may be transported. Save it for possible future use.

SERVICE

If the unit ever needs repair service, the customer should contact the nearest Philips Communication & Security Systems Inc. Service Center for authorization to return and shipping instructions.

Service Centers

U.S.A. & Canada: 800-366-2283
Mexico & Central America: 52-5-564-2726
Europe & Middle East: 44-1932-765666
South America: 54-1-956-0837
Australia: 61-2-888-9000
New Zealand: 64-4-237-7297

1 INSTALLATION

This installation should be made by a qualified service person and conform to all local codes.

Always disconnect power to unit at controller prior to connecting or disconnecting pan/tilt electrical connector. Pan/tilt to be mounted away from unauthorized access [3 meters (10 feet) high minimum]

The LTC 9418 Series and LTC 9420 Series units are designed for either upright or inverted installations. To maintain weatherproof integrity when mounting outdoors in an inverted position, the unit must be installed in a weatherproof enclosure (e.g., weatherproof domed housing) or a protected outside area.

Pan/tilts and associated equipment should be tested prior to field installation to verify proper wiring and operation of components.

The maximum load is 80.5 kg-cm (70 in-lb) torque or 10 kg (22 lb) at a distance of 63.5 mm (2.5 in) from the center of mass of the camera/lens/housing assembly to the center of the tilt table. The combined weight of the enclosure/camera/lens should be centered equally, front to back, on the tilt table surface for best pan/tilt operation. See **RECOMMENDED APPLICATIONS**.

1.1 Model Designation

Model No.[1]	Rated Motor Voltage	Voltage Range	Pan Range
Standard Models			
LTC 9418/60	110 VAC, 60 Hz	108 to 132	0° to 345°
LTC 9418/20	24 VAC, 60 Hz	21.6 to 26.4	0° to 345°
LTC 9418/10	24 VAC, 50 Hz	21.6 to 26.4	0° to 345°
LTC 9418/50	220 VAC, 50 Hz	207 to 253	0° to 345°
LTC 9420/60[2]	110 VAC, 60 Hz	108 to 132	0° to 345°
LTC 9420/20[2]	24 VAC, 60 Hz	21.6 to 26.4	0° to 345°
LTC 9420/10[2]	24 VAC, 50 Hz	21.6 to 26.4	0° to 345°
LTC 9420/50[2]	220 VAC, 50 Hz	207 to 253	0° to 345°
Pre-Position Models			
LTC 9418/61	110 VAC, 60 Hz	108 to 132	0° to 345°
LTC 9418/21	24 VAC, 60 Hz	21.6 to 26.4	0° to 345°
LTC 9418/11	24 VAC, 50 Hz	21.6 to 26.4	0° to 345°
LTC 9418/51	220 VAC, 50 Hz	207 to 253	0° to 345°
LTC 9420/61[2]	110 VAC, 60 Hz	108 to 132	0° to 345°
LTC 9420/21[2]	24 VAC, 60 Hz	21.6 to 26.4	0° to 345°
LTC 9420/11[2]	24 VAC, 50 Hz	21.6 to 26.4	0° to 345°
LTC 9420/51[2]	220 VAC, 50 Hz	207 to 253	0° to 345°
Continuous Pan Models			
LTC 9420/22[2]	24 VAC, 60 Hz	21.6 to 26.4	0° to 360°
LTC 9420/12[2]	24 VAC, 50 Hz	21.6 to 26.4	0° to 360°

1. The total power for all models, with both motors running, is 24 W.

Caution: Do Not Exceed 30 VAC Input on 24 VAC models. Operation above 30 VAC violates low voltage operation (Class 2 Specifications). Normal operation is 24 VAC.

cUL Approved 24 VAC Models.
Caution: Connect to Class 2 Power Supply only. Total current through electrical connector is 4 A maximum. Pan/tilt current is 1 A maximum. Allowable camera/housing is 3 A maximum. Use only 24 VAC cameras and housings on feed-thru models.

1.2 Recommended Controls

LTC 5133 Series LTC 5134 Series	Desktop Pan/Tilt/Lens Control via hardwired connections.
TC8561A Series	Remote Receiver/Driver for a balanced line system. For use with LTC 8600, LTC 8800, and LTC 8900 Series systems.

1.3 Recommended Mounting Equipment

TC9216WM	Medium duty wall mount designed to support up to 45.3 kg (100 lb).
TC9222WM	Heavy duty wall mount designed to support up to 90.6 kg (200 lb).
TC9214CM	Heavy duty 336 mm (14 inch) column mount for ceiling or pedestal.
TC9224CM	Heavy duty 610 mm (24 inch) column mount for ceiling or pedestal use.
TC9218RM	Parapet/Roof mount designed to support up to 68 kg (150 lb).
TC9300 Series Domes	Indoor and outdoor domes designed to contain both pan/tilt and camera/lens combinations. Contact your local Philips Communication and Security Systems Inc. Sales Representative for correct dome, pan/tilt, camera combinations.

1.4 Wall Mounting

Follow the instructions provided with mounts. Mount and mounting surface must be able to support the weight of the pan/tilt, camera/lens, and enclosure (if used). The camera/lens/enclosure must be properly mounted and balanced on the pan/tilt bracket.

Caution: The LTC 9418 Series and LTC 9420 Series pan/tilt can only be mounted upright or inverted; never horizontally.

1.5 Camera/Lens/Enclosure Mounting

Mount the camera/lens/enclosure to the pan/tilt bracket as follows:

1. Balance the camera/lens/enclosure and adjust unit to align with mounting holes. Fasten with a minimum of two (2) 1/4-20 x 1/2-inch long fasteners and lock washers.
2. Make all electrical connections. Leave sufficient loops of cable between camera/enclosure and pan/tilt to allow for tilting and panning.

1.6 Electrical Connections

1. Cable must be wired according to **Connector Assembly** and **Recommended Maximum Cable Lengths**.
2. Use separate shielded cables for camera power, enclosure power, and pan/tilt control. If required, combining lens control wiring and video coax within a common cable is acceptable. The use of a common multiconductor cable to combine all functions is not recommended.
3. Use color coded conductors to aid wiring and future identification.
4. Retain wiring diagram for later reference.

Model Voltage	Wire Size mm^2	Wire Size AWG	Distance Feet	Distance Meters
24 VAC	0.5	20	140	43
	1	18	230	70
	1.5	16	360	110
	2.5	14	590	180
	4	12	940	287
110 VAC	0.5	20	2200	671
	1	18	3500	1067
	1.5	16	5500	1677
	2.5	14	9000	2744
220 VAC	0.5	20	13400	4085
	1	18	21200	6463
	1.5	16	33300	10152
	2.5	14	54400	16585

1. Values calculated at 20 ºC (68 ºF) using stranded tinned copper wire, a common ground (neutral), and with both PAN and TILT motors operating simultaneously.

AMP Hand Crimping Tool #58495-1 is recommended for crimping of sockets. Model listings on the following page detail the electrical connections required. Refer to **Figure 2: Wiring Instructions** for the numbered connector positions.

The connector will accept up to a #16 AWG wire. If heavier gauge wire is required, pigtailing according to local electrical codes is recommended.

Caution: Contact removal from connector requires use of AMP #305183 extraction tool.

1.7 Grounding Connection

A ground screw is located on the base to the right of connector. See **DIMENSIONAL OUTLINE**. Connect a 1 mm^2 (No.18 AWG) ground wire to the nearest earth ground.

1.8 Connector Assembly

A mating connector, sockets and a strain relief are included with the unit. See **Figure 1: Shield/Strain Relief Assembly.**

To install, select the appropriate size strain relief clamp. Choose one of the two strain relief clamps enclosed with the sleeve and the extender. The clamping area is adjustable by inverting or changing the strain relief clamps. Discard the four strain reliefs on the carrier strip packaged with the shield.

Insert the clamp into the strain relief until it bottoms. The clamp should bottom on the wire bundle, **not** on the shield's shoulder. If the wire diameter is too small, **temporarily** wrap the wire with electrical tape until proper clamping is obtained. Secure the clamp with the two (2) screws provided.

Caution: Make sure the wire bundle is properly secured. Do NOT pinch the wires.

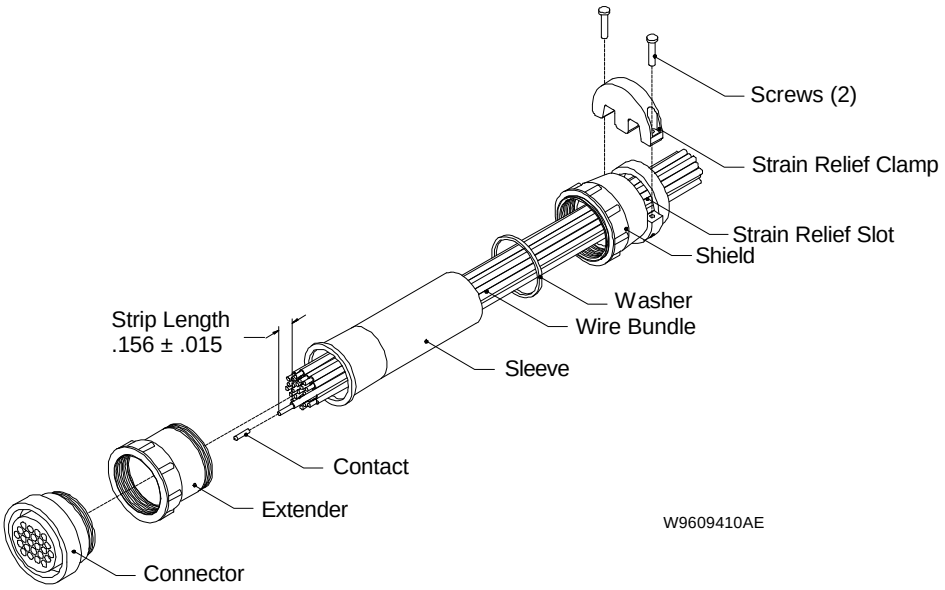

Figure 1: Shield/Strain Relief Assembly

WIRE DESIGNATION AND PIN CONNECTIONS

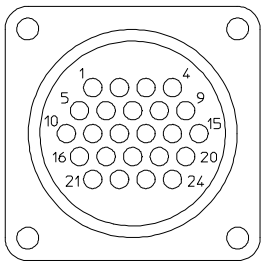

Figure 2: Pin Outs

LTC 9420/60, LTC 9420/20, LTC 9420/50[5], and LTC 9420/10 345° Non-Pre-Position Models[6]

Pin Number	Color
1: NC[1]	
2: NC[1]	
3: NC[1]	
4: NC[1]	
5: Lens Common	Green[2]
6: Zoom	Blue[2]
7: Focus	Violet[2]
8: Unused	Brown[2]
9: Unused	Black[2]
10. Accessory	White[2,3]
11. Accessory	Red[2,3]
12. Accessory	Yellow[2,3]
13: NC[1]	
14: NC[1]	
15: NC[1]	
16: Pan Left	White
17: NC[1]	
18: Pan Right	Violet
19: P/T Common	Blue
20: Tilt Up	Brown
21: Tilt Down	White/Yellow
22: Ground	Green/Yellow
23: Camera AC-Line	Black[2,4]
24: Camera AC-Neutral	White[2,4]

LTC 9418/60, LTC 9418/20, LTC 9418/50[5], and LTC 9418/10 345° Non-Pre-Position Models[6]

Pin Number	Color
1: NC[1]	
2: NC[1]	
3: NC[1]	
4: NC[1]	
5: NC[1]	
6: NC[1]	
7: NC[1]	
8: NC[1]	
9: NC[1]	
10. NC[1]	
11. NC[1]	
12. NC[1]	
13: NC[1]	
14: NC[1]	
15: NC[1]	
16: Pan Left	White
17: NC[1]	
18: Pan Right	Violet
19: P/T Common	Blue
20: Tilt Up	Brown
21: Tilt Down	White/Yellow
22: Ground	Green/Yellow
23: NC[1]	
24: NC[1]	

LTC 9420/22 and LTC 9420/12 360° Non-Pre-Position Models[7]

Pin Number	Color
1: NC[1]	
2: NC[1]	
3: NC1	
4: NC[1]	
5: Lens Common	Green[2]
6: Zoom	Blue[2]
7: Focus	Violet[2]
8: NC[1]	
9: NC[1]	
10. Accessory	White[2,3]
11. Accessory	Red[2,3]
12. Accessory	Yellow[2,3]
13: NC[1]	
14: NC[1]	
15: NC[1]	
16: Pan Left	White
17: NC[1]	
18: Pan Right	Violet
19: P/T Common	Blue
20: Tilt Up	Brown
21: Tilt Down	White/Yellow
22: Ground	Green/Yellow
23: Camera AC-Line	Black[2,4]
24: Camera AC-Neutral	White[2,4]

LTC 9420/61, LTC 9420/21, LTC 9420/51[5], and LTC 9420/11 345° Pre-Position Models[6]

Pin Number	Color
1: PP Supply (+)	Orange[2]
2: Pan Position	Yellow[2]
3: PP Return (-)	Gray[2]
4: Tilt Position	White/Black[2]
5: Lens Common	Green[2]
6: Zoom	Blue[2]
7: Focus	Violet[2]
8: Zoom Position	Brown[2]
9: Focus Position	Black[2]
10. Accessory	White[2,3]
11. Accessory	Red[2,3]
12. Accessory	Yellow[2,3]
13: NC[1]	
14: NC[1]	
15: NC[1]	
16: Pan Left	White
17: NC[1]	
18: Pan Right	Violet
19: P/T Common	Blue
20: Tilt Up	Brown
21: Tilt Down	White/Yellow
22: Ground	Green/Yellow
23: Camera AC-Line	Black[2,4]
24: Camera AC-Neutral	White[2,4]

LTC 9418/61, LTC 9418/21, LTC 9418/51[5], and LTC 9418/11 345° Pre-Position Models[6]

Pin Number	Color
1: PP Supply (+)	Orange[2]
2: Pan Position	Yellow[2]
3: PP Return (-)	Gray[2]
4: Tilt Position	White/Black[2]
5: NC[1]	
6: NC[1]	
7: NC[1]	
8: NC[1]	
9: NC[1]	
10. NC[1]	
11. NC[1]	
12. NC[1]	
13: NC[1]	
14: NC[1]	
15: NC[1]	
16: Pan Left	White
17: NC[1]	
18: Pan Right	Violet
19: P/T Common	Blue
20: Tilt Up	Brown
21: Tilt Down	White/Yellow
22: Ground	Green/Yellow
23: NC[1]	
24: NC[1]	

Notes

1. NC -- No Connection, do not use.
2. (Color Codes) indicate feed-thru wiring to camera/housing.
3. Apply to 24 volt models only. Pins 10 thru 12 are not used in 110 volt or 220 volt models.
4. (Color Codes) shown are for 24 volt and 110 volt models. For 220 volt models, color codes are (23) Brown, and (24) Blue.
5. The conductors for pins 16 thru 24 (where applicable) on 220 volt models should be isolated from other wiring with reinforced insulation requirements of DIN VDE 0860/05.89, IEC 65, 1985. The conductors for pins 16 thru 24 (where applicable) must be in HAR cord minimum cross sectional area 0.75 mm^2 (H05 VV-F).
6. Refer to **Figure 6** under Wiring Diagrams for the wiring schematic.
7. Refer to **Figure 7** under Wiring Diagrams for the wiring schematic.

1.9 Pan Stops (345° Models)

Locate the three (3) limit stops on the base of the unit. The red limit stop is the Fixed Stop. It is not adjustable and should **not** be removed. The remaining two (2) stops are called the Pan Stops. These are positioned on each side of the pan switch lever.

The two (2) pan stops are adjustable and secured with a set screw. The screws can be accessed through the hole in the end of each stop. Use a 3/32-inch Allen wrench (supplied) to loosen and tighten the set screw. See **Figure 3: Pan Stop Locations (345° Models)**.

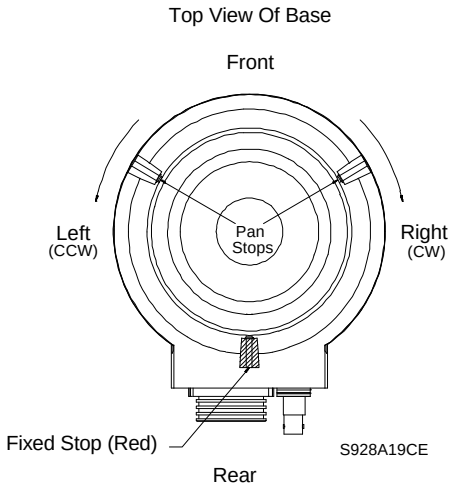

Figure 3: Pan Stop Locations (345º Models)

2 OPERATION

2.1 Manual Pan Operation (345° Models)

The pan stops establish the limits for manual pan. The two (2) adjustable pan stops may be repositioned or removed depending on the desired operation. The maximum pan range setup is shown in **Figure 4: Maximum Manual Pan and Maximum Auto-Pan (345º Models)**.

Caution: Never move or remove the fixed stop. It must always be in place for proper operation of the pan function.

2.2 Auto-Pan Operation (345º Models)

Use of the auto-pan function requires wiring connections to pin 16 (Pan Left), pin 18 (Pan Right), and pin 19 (Common). See **Figure 6: Wiring Diagram (0º - 345º Models)**. The auto-pan function is achieved by the controller unit sensing changes in current flow through the pan motor. When a pan stop is reached, the current flow stops and internal circuitry of the controller unit reverses the auto-pan direction.

Note: The pan/tilt controller must be equipped with special current sensing circuitry to operate the auto-pan function in this mode.

The pan stops or the fixed stop establish the limits for auto-pan.

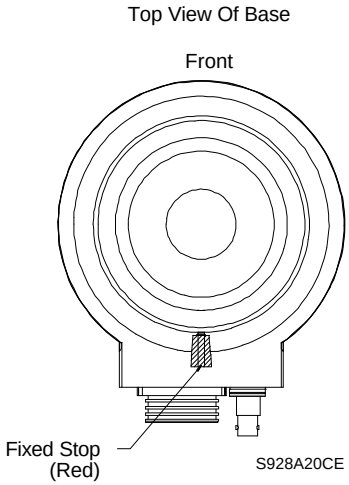

Figure 4: Maximum Manual Pan and Maximum Auto-Pan (345º Models)

2.3 Pan Stop Adjustment (345° Models)

1. Loosen the pan stops and adjust to the desired range for manual pan and auto-pan. A recessed area in the pan head allows enough clearance to remove a stop from the base.
2. When all the stops are in place, check to see that they are secure.
3. Operate the unit from the controller to confirm that the limits are set properly. Readjust if required.

2.4 Pan Operation (360° Models)

These models allow 360 degree rotational (pan) operation. They have no pan stops. These units can be manually panned left or right or they can be panned continuously left or right by auto-pan activation. Auto-Pan activation requires wiring connections to pin 16 (Pan Left), pin 18 (Pan Right), and pin 19 (Common). See **Figure 7: Wiring Diagram (360° Models)**.

2.5 Tilt Stop Adjustment (All Models)

After the unit is installed and all wire connections are made, apply proper power to the control unit. Refer to **Figure 5: Tilt Stops (Side View - Plug Removed)** and adjust the tilt stops as follows:

1. With the front of the pan/tilt facing you, remove the left hub cap. The tilt stop adjustment screws are now exposed.
2. Using the control unit, tilt the bracket up to the desired position and stop the unit. Use the 3/32-inch Allen wrench to loosen the Tilt Up stop. Slide the stop Up until a faint click is heard (indicating switch actuation). Tighten the Tilt Up limit stop screw.
3. Using the control unit, tilt the bracket to the desired position and stop the unit. Use the 3/32-inch Allen wrench to loosen the Tilt Down stop. Slide the stop Down until a faint click is heard. Tighten the Tilt Down limit stop screw.
4. Operate the control unit to verify proper tilt stop range and operation. Repeat above sequence if necessary. Make certain both tilt stop screws are snug. Replace the hub cap.

Caution: Do not operate pan/tilt unit without stops. Limit stops should not be adjusted while unit is operating.

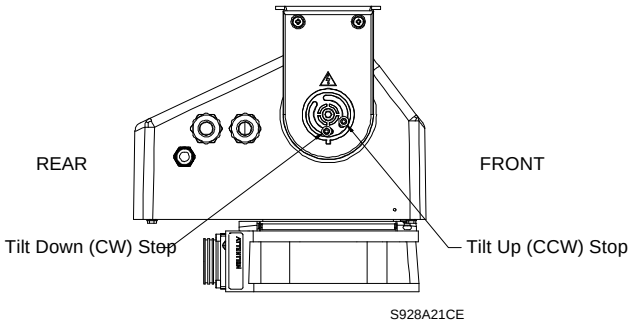

Figure 5: Tilt Stops (Side View - Plug Removed)

2.6 Pre-Position Models

The 345° models with pre-position capability have “P” suffix in the model number. These models require wiring connections to pins 1 through 4, 8 and 9, and the use of a controller or receiver/driver with the pre-position function. Pan and tilt operation and limit stop adjustments, function the same as the previous models described.

3 WIRING DIAGRAMS

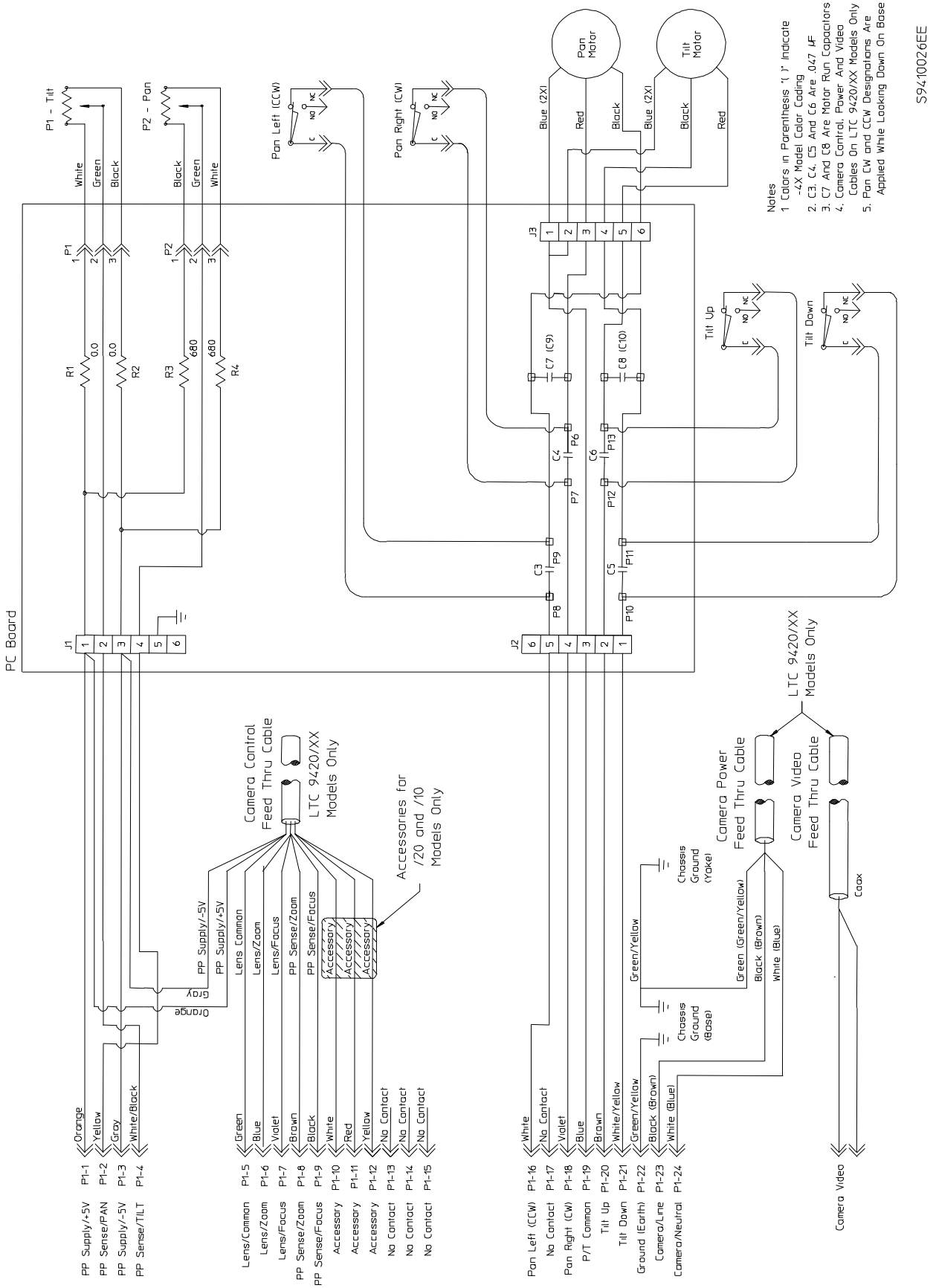

Figure 6: Wiring Diagram - 0º to 345º Models

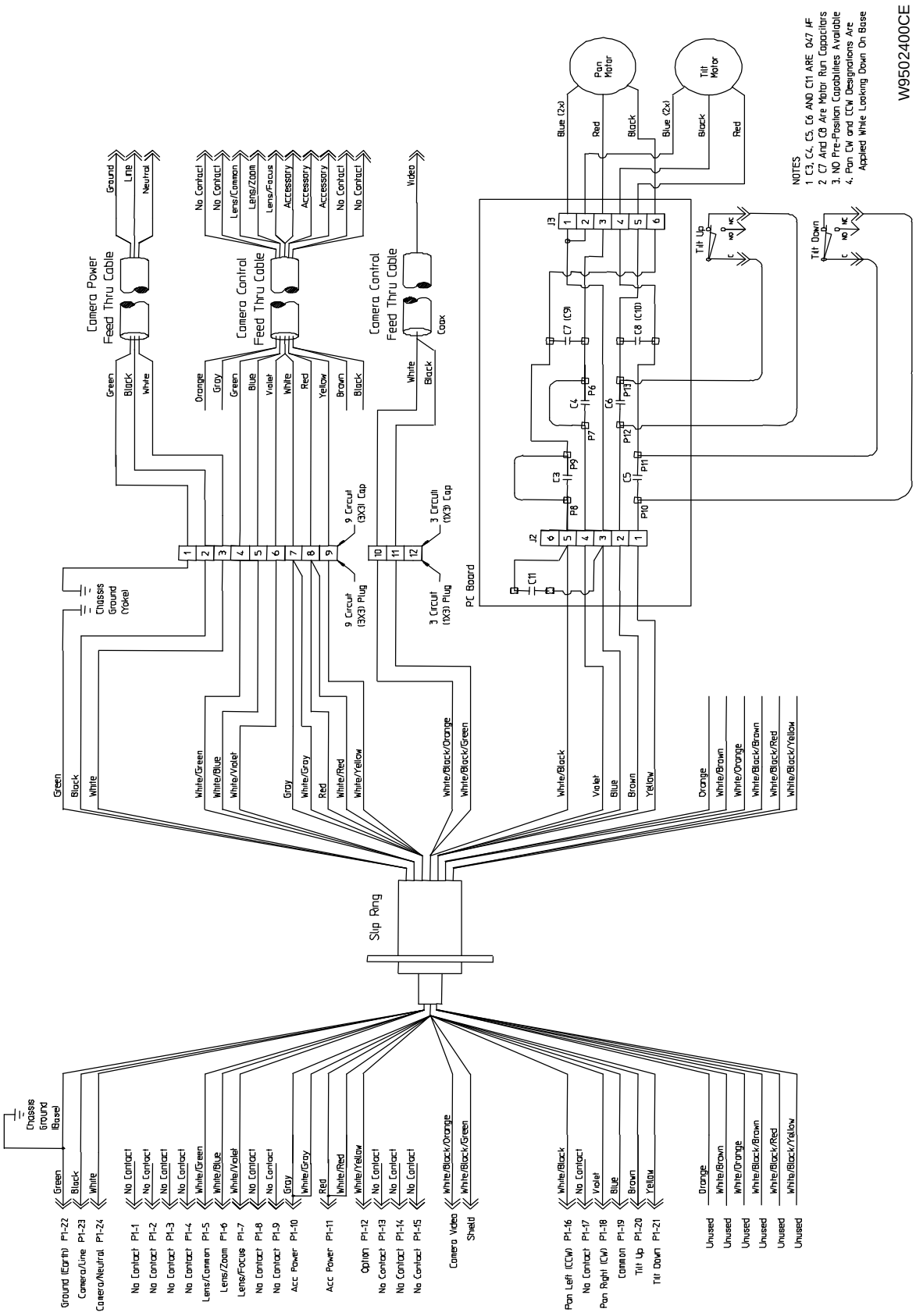

Figure 7: Wiring Diagram - 360º Models

4 RECOMMENDED APPLICATIONS

CCD Camera, Lens, and Housing Combinations

Camera Model	Lens Models					
	Fixed All	**1/3-inch - 6X TC9938**	**1/2-inch - 6X TC9948A**	**1/2-inch - 6X TC1848B**	**1/3-inch - 10X TC9958**	**1/2-inch - 10X TC9970A**
TC380 Series	1, 2,3,5	---	2,3,4,5,6	2,3,4,5,6	---	2,3
TC390 Series	1,2,3,4,5	2,3,5	2,3,5	2,3	2,3	2,3
TC350A Series	1,2,3,4,5,6	---	1,2,3,5	1,2,3	---	2,3
TC360 Series	1,2,3,4,5,6	---	1,2,3,4,5	1,2,3	---	1,2,3
TC370 Series	1,2,3,4,5,6	1,2,3,4,5	1,2,3,4,5	1,2,3,4	1,2,3,4	1,2,3
TC550A Series	1,2,3,4,5,6	1,2,3,4,5,6	1,2,3,4,5,6	1,2,3,4	1,2,3,4	1,2,3
TC590 Series	1,2,3,4,5,6	1,2,3,4,5	1,2,3,4,5	1,2,3	1,2,3,4	1,2,3
TC650B Series	1,2,3,4,5,6	---	1,2,3,4,5,6	1,2,3,4	---	1,2,3
TC952, TC952X	1,2,3,4,5,6	---	---	---	---	---
TC972, TC972X	1,2,3,4,5,6	---	---	---	---	---

Housing Code:
1 - TC9340A 2 - TC9385 3 - TC9388 4 - TC9383 5 - TC9358 6 - TC9353

Note: 24 volt model cameras used. Combinations shown include the weight of applicable accessories.

360° Models Only

Use only 24 volt cameras/housings with 360° model pan/tilts.

The maximum power for heater/blower combinations is 75 watts to prevent overloading the slip ring. This load must be powered by pin 10, (white feed-thru) and pin 11 (red feed-thru). See Figure 1: Wiring Instructions.

LTC 9420 Series 24 Volt Models

To maintain cUL and TUV Approval, use only 24 volt cameras/housings.

5 DIMENSIONAL OUTLINE

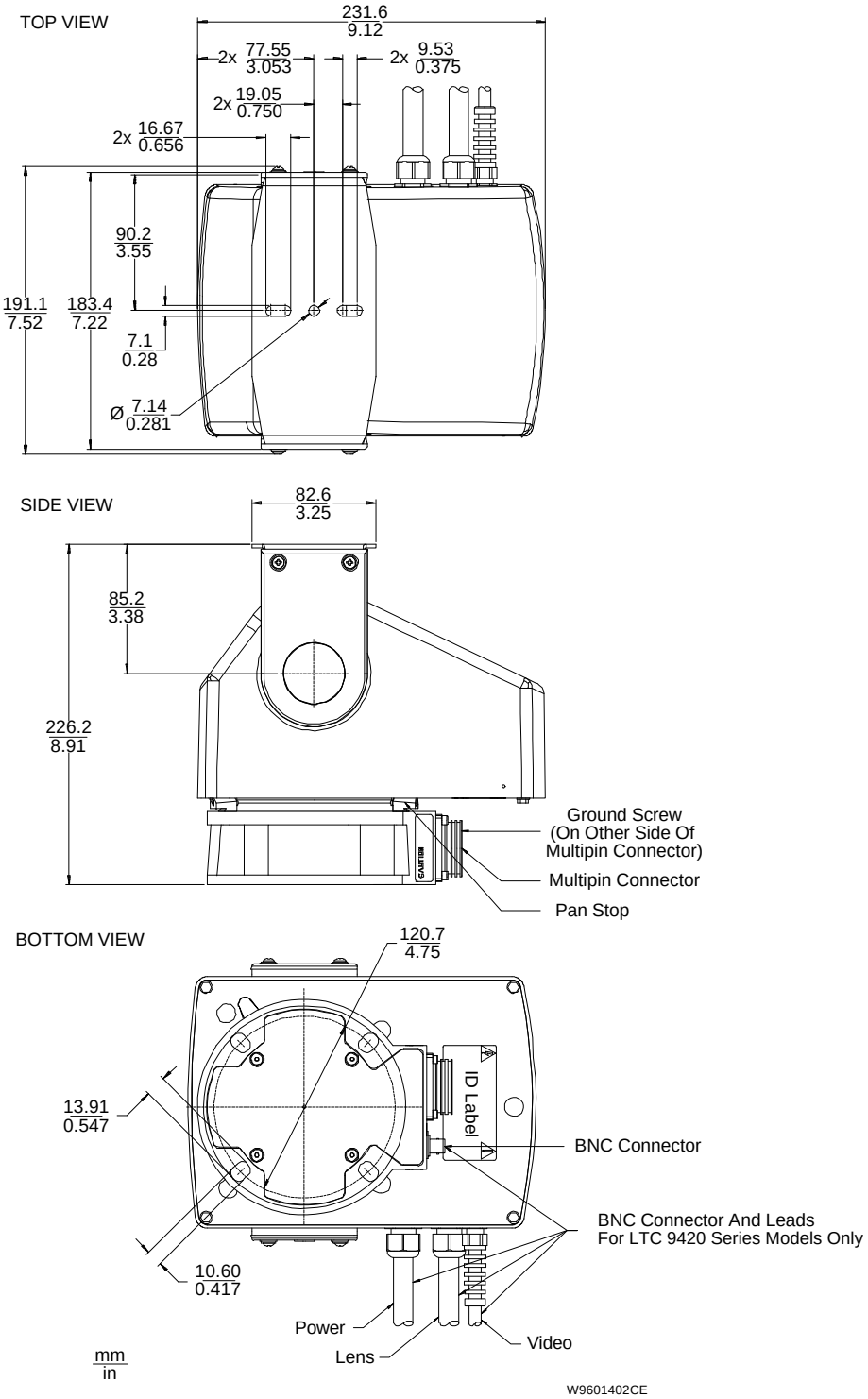

Figure 8: Dimensional Outline For All LTC 9418 Series and LTC 9420 Series Models Except Note That The Feed-Thru Wiring Shown Applies to the LTC 9420 Series Models